



# *relax*

THE STRESS REDUCTION SYSTEM

**GETTING STARTED**



# Introduction

**R**ELAX allows you to measure the amount of tension in your muscles, tension you are ordinarily unaware of. As you observe immediate and continuous visual information about your muscle tension, you gradually become aware of your physical tension level. With this new awareness, you can learn to decrease your tension level so that you can enter a state of deep relaxation quickly whenever you choose.

RELAX is made up of four basic parts:

1. The RELAX audio cassette tape, which includes a 25-minute Introductory Guided Relaxation Exercise to use while observing THE RELAX GRAPH. This exercise will help you associate your feelings of tension and relaxation with what is happening on the screen. It will also assist you in letting go of tension and enhancing your deep relaxation.
2. The blue corduroy headband, which holds three sensors snugly in place on your forehead.
3. The electromyograph unit, which refines the signals received by the sensors.
4. The RELAX software diskette, which contains three programs: THE RELAX GRAPH, THE SENSORAL KALEIDOSCOPE, and THE BALLOON GAME. These programs represent your fluctuating levels of muscle tension in three different ways on your computer screen.

# The Relax Hardware

## Headband

**B**e sure that your forehead and the sensors are clean. To ensure good contact with the sensors, moisten them slightly with water, a saline solution, or a gel. Push your hair away from your forehead so that no hair is trapped between your skin and the sensors. Place the blue headband gently around your head, with the sensors resting firmly on your forehead. Fasten the adjustable Velcro strip behind your head. Adjust the headband so that the bottom is level with the tops of your eyebrows.

To test whether you have a good contact, refer to the section in this manual entitled The RELAX Graph. If you have trouble making contact, be sure to moisten the sensors; you can even dampen your forehead with a wet washcloth or paper towel. If you choose to put your sensors on dry, you may have to wait a few minutes for a natural perspiration contact to develop.

Be sure to keep the sensors clean. You can use alcohol, acetate, or nail polish remover to clean them, but be careful to avoid getting these substances on the headband. Finally, do not fold or store the headband in a tight place.

## Electromyograph (EMG) Unit

Insert the headband plug into the EMG unit. Now follow the instructions for your particular computer.

### ATARI

Insert the EMG plug into the joystick **Controller Port 1** of your computer.

### COMMODORE 64

Insert the EMG plug into **Control Port 2** of your computer.

**APPLE and IBM PCjr**

Insert the plug from the EMG unit into the single-end "EMG" plug on the RELAX adapter (included in this package). Then choose one of the marked plugs corresponding to your computer and insert it into the joystick port of your computer.

**IBM PC**

Plug your IBM Game Control Adapter (not included in this package) into your computer. Insert the plug from the EMG unit into the single-end "EMG" plug on the RELAX adapter (included in this package). Locate the plug marked **IBM** on the RELAX adapter and plug it into the Game Control Adapter.

Turn on your EMG. A small red light on the top of the EMG unit should come on. If it does not, check to be sure that you have inserted the batteries correctly and that they are securely in place against the battery contacts. Do not use weak batteries.

The **RANGE** and **FINE TUNE** knobs are used to adjust the EMG sensitivity to muscle tension. Their function is explained in more detail in the section on The RELAX Graph.

Be careful not to drop the EMG unit!

# Loading the Relax Software

## Atari 400 and 800

**F**irst, open the cartridge door of the keyboard module. Pull the release lever (located above the row of numeric keys) toward you. If there are any cartridges in the slots, remove them and close the cartridge door.

### 400, 800, and XL series

**Disk:** Turn on your disk drive and wait for the busy light to go out. Insert the RELAX program disk into the disk drive with the Atari label toward the front of the drive and facing up. Close the disk drive door and turn on your computer. The program will load in about 30 seconds.

If you have any trouble loading the program, remove the disk, turn off your computer and repeat the loading instructions.

**Cassette:** Insert the program cassette into the cassette recorder with the Atari label facing up. Press the **PLAY** button on the cassette recorder until it locks in the down position. Hold down the **START** button on your computer and turn on the power switch. After you hear a beep, press the **RETURN** key. The program will load in about four to five minutes.

If you have any difficulty loading the program, rewind the tape to the beginning and repeat the loading procedure.

## Commodore 64

**Disk:** First, be certain that both the disk drive and the computer are turned on. Then insert the RELAX program disk into the drive. Type **LOAD** and press the **spacebar**. Then type, in sequence: **"\*,8,1** and press **RETURN**.

**Cassette:** Insert cassette into the cassette player. Press the **PLAY** button. Hold down the **SHIFT** key on the keyboard and press the **RUN/STOP** key on the keyboard once. Release the **SHIFT** key. When **Found** displays on the monitor, press the Commodore key.

**Apple** Turn on the disk drive. Then insert the **RELAX** program disk with the label toward the front of the drive, facing up. Turn on the computer. The program will load automatically.

Do not press the **RESET** key. If you do, type **Pr#6** to reload program.

To turn the sound off and on, press the **Q** key.

**IBM PC and PCjr:** Insert the **RELAX** program disk into drive A with the label toward the front of the drive, facing up. If the computer is on, while holding down the **CTRL** and **ALT** keys, press the **DEL** key. The program will load and begin automatically. If the computer is off, insert the disk into drive A with the label toward the front of the drive, facing up. Then turn the computer on and the program will load automatically and begin.

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## The Relax Menu

**W**hen you load your RELAX disk or cassette, a menu will appear on your screen which you can use to choose either THE RELAX GRAPH, THE SENSORAL KALEIDOSCOPE, or THE BALLOON GAME. A key will also be displayed (on all but the Atari cassette version) which you can use to return to the main menu after using one of the programs. To make a selection from the menu, press the key indicated for your choice. To return to the main menu:

**C-64** - press the **F1** key.

**Atari, Apple, IBM** - press the **ESC** key.

When you have selected THE RELAX GRAPH from the main menu, your screen will display a graph numbered from 350 to 500 along the left side. These numbers represent the upper portion of a 500-point scale. The scale provides a means of measuring your relative muscle tension and relaxation.

Interval marks are created continuously at the top and bottom of the screen. When your sample rate (the number of readings taken off the headband per second) is more than one sample per second, the interval marks appear every second. When your sample rate is one second or less, the interval marks appear every half minute.

When the sensors are in good contact with your forehead, the needle-like trace on the graph will indicate your current level of muscle tension. Adjust your tension level to about 450 using the EMG unit **RANGE** and **FINE TUNE** knobs. First use the **RANGE** knob for coarse adjustments and then the **FINE TUNE** knob for fine adjustments.

A simple test to determine if your sensors have good contact is to clench your teeth and observe the trace. It should immediately move to the top of the scale. Now relax your jaw. The trace should return to about 450. If you have good contact now, the trace line will constantly move up and down within a narrow range and will move up dramatically whenever you clench your teeth or frown. If you do not have the proper contact, the trace line will react in one of the following ways: it will be relatively smooth and will not rise when you clench your teeth; it will move erratically all over the scale with no correspondence to whether your jaw is clenched or relaxed; or it will periodically jump to the bottom of the screen and then back up. If you have poor contact, review the hardware instructions for the use of the headband and EMG unit.

If your contact is good, you are now observing a direct sample of your muscle tension. The sample rate is the number of readings being taken off the headband per second. There are eight different sample rates. If you have an Atari or Apple computer, the sample rates are 60, 30, 20, 4, 2, 1, .5, and .25. If you have a Commodore 64, IBM PC or PCjr, the rates are 30, 20, 10, 4, 2, 1, .5, and .25. To change the sample rate, follow these instructions:

**Atari** — Press the **SELECT** key.

**Apple and IBM** — Press the **S** key.

**Commodore 64** — Press the **F5** key.

The first three rates provide the most immediate and continuous information about your muscle tension and therefore are the most useful as you are becoming aware of your internal cues of tension and relaxation. These

rates may even be sensitive and rapid enough to detect muscle tension associated with fleeting distressful thoughts. The other five rates provide fewer “snapshots” of your tension every second, but they enable you to observe your tension level over a longer period of time on the graph. This is useful when you want to observe trends in your relaxation.

In addition to a direct sample rate, RELAX can show an average of your muscle tension over three different time periods. The averaging function is useful in smoothing out the graph, especially when the direct sample is very erratic. (Make sure that the reason for the erratic graph is not due to poor contact between the sensors and your skin.) The longer the averaging period, the smoother the graph. To shift from direct sample mode to average mode, refer to these instructions:

**Atari** — Press the **OPTION** key.

**Apple and IBM** — Press the **A** key.

**Commodore 64** — Press the **F3** key.

Samples of your muscle tension will be averaged over 1.06 seconds, 2.12 seconds, and 4.25 seconds.

**THE RELAX GRAPH** is a highly sensitive 500-point scale that enables you to monitor your relative muscle tension level. Each time you begin to use it, set the range at about 450. As you relax, the trace will drop. When you reach about 350, press the spacebar on your keyboard. This will temporarily “freeze” the trace at about 350. Push the **RANGE** knob of the EMG unit upward so that the scale and trace move up together until 200 appears at the bottom of the screen. Release the trace by pressing the spacebar again. Repeat this procedure when the trace reaches 250 and 100.

If you are somewhere in the middle of the scale and you would like to reset the scale so that 500 appears at the top, follow these instructions:

**Atari** — Press the **START** key.

**Apple and IBM** — Press the **R** key.

**Commodore 64** — Press the **F7** key.

Few people beginning with THE RELAX GRAPH can relax 500 points. The rare individual who can do this is likely to be an experienced meditator or athlete. If you are a tense person, you will be doing very well at first to reduce your tension level 25 points during a 20-minute session. With practice, you will be able to relax deeply in a short period of time.

THE RELAX GRAPH is a relative, rather than absolute, scale for measuring muscle tension. That is, it compares how tense you are in one moment with how tense (or relaxed) you are in the next moment. By not defining what is “normal,” THE RELAX GRAPH discourages your competing with others and even yourself.

This is a good point at which to stop reading, sit back in a comfortable position, and follow the instructions given in the Introductory Guided Relaxation Exercise on the RELAX audio cassette tape.

## 2. The Sensoral Kaleidoscope

THE SENSORAL KALEIDOSCOPE is another way of providing feedback about your muscle tension. Instead of the quantitative feedback of the graph, it offers rich, semi-hypnotic visual imagery. Some people find the kaleidoscope a welcome change after the graph. Others prefer to work with the graph and not even use the kaleidoscope. Do not feel that your own personal progress must include the use of both of these visual tools. They are provided as two completely different ways to visualize tension and respond to it.

THE SENSORAL KALEIDOSCOPE is actually a series of changing kaleidoscopes in which colors and pattern types change, depending upon your tension level. Think of the color changes as corresponding to levels of tension and the pattern changes as being more sensitive to smaller tension fluctuations.

**Setting the Kaleidoscope:** After your headband is in place, push the **RANGE** knob to the top of the scale. Wait until the screen color shifts no longer occur (at least 15-20 seconds). Then slowly begin to slide the **RANGE** knob down until you see the shapes which have been forming toward the sides of the screen begin to form closer to the center. The kaleidoscope is now set; you may begin using it to relax.

**Color changes:** Tension produces bright patterns which become progressively darker and more muted the more relaxed you become. As you relax and your tension decreases, the kaleidoscope splits and the two halves move toward the top and bottom of the screen. Another kaleidoscope in a different color emerges from the center. This splitting represents your achievement of a lower tension level. If you tense, the previous kaleidoscope moves onto the screen from the top and bottom and joins in the middle.

**Pattern changes:** Some patterns seem to pulsate from the middle of the screen, but others may generate from as many as six centers. The closer the centers of the generating patterns are to one another, the more relaxed you are. To summarize, when you relax, the kaleidoscope reacts to small changes by changing the pattern from many epicenters to one centrally pulsating figure; the kaleidoscope reacts to more dramatic tension changes by changing color. To pause and then release the kaleidoscope at any time, press the spacebar.

### 3. The Balloon Game

THE BALLOON GAME lets you reap the benefits of your learning with the graph and kaleidoscope. In this challenging game, you control the flight of a balloon with your tension level. You must catch the bubbles that enter your screen from the right while avoiding the pins from the left that are headed straight for your balloon.

To begin the game and choose your skill level, press the key you used to change the sample rate on the RELAX graph (page 8).

To choose the type of game, press the key you used to change from direct sample to averaged sample on the RELAX graph (page 9).

Next you need to choose whether you would like the game to be determined by the number of “hits” or “misses.” If you choose “Float Game,” the game will end after your balloon has touched a total of 20 bubbles and pins. If you choose “Challenge Game,” the game will end when you have missed ten bubbles. After you have used up all your hits and/or misses, your balloon will float down to the bottom of the screen where a little boy will grab it and surprise you.

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## Benefits of Deep Relaxation

**P**eople who learn to relax using RELAX report feeling refreshed, energized, calm, and at peace. Many report a reduction or elimination of some symptoms of tension or anxiety. Others state that their concentration improves and their productivity increases after relaxing deeply. Some say that they sleep better or dream more.

### Dealing with Problems Relaxing

One of the most common problems in learning to relax is “trying too hard.” Remember to maintain a “passive attitude.” Let the physical sensations of relaxation develop and observe the changes. Do not become too involved in wondering whether you are doing a relaxation exercise correctly. Do not evaluate your progress or expect a particular outcome. Be open to surprises. Experiment.

While learning to relax, some people actually feel worse before they feel better. This is usually due to increased self-awareness. As you tune in to your muscle tension level, you become aware of small discomforts which you ignored before. You will pass through this phase as you learn to relax your tense muscles.

Some people report “no change” for a long period of time. Others feel better for a while and then worse for a while in their relaxation training program. You may experience periods of rapid learning, followed by plateaus and even regression. These reversals may be due to the amount of tension you bring to the RELAX session from external stressors. Learning to relax also involves “incremental learning,” becoming aware that a particular physical cue for relaxation exists, before you can experience “progressive learning,” enhancing your

physical sensations by relaxing deeply. If you have difficulty noticing subjective cues of tension and relaxation, remember that these cues are subtle. Focus your attention on changing sensations.

If you find yourself having negative thoughts such as “I can’t relax,” notice your exact words. Then turn these negative self-statements into positive ones, and repeat them several times to yourself.

When your mind wanders from the task at hand, gently bring it back. Do not criticize yourself for allowing your attention to slip; it is perfectly natural and will happen every time you practice relaxation exercises. Do not, however, fall into the habit of allowing yourself to daydream when you have scheduled time to practice deep relaxation.

If you tend to fall asleep when you begin to relax, sit up straight in a chair. If you continue to fall asleep, you may be sleep-deprived. Some people seem to use sleep to avoid the unfamiliar experience of tuning in to subtle internal sensations. Indeed, learning to relax is not a stimulating activity in the usual sense; it takes practice to develop the discipline and awareness necessary to appreciate subtle cues of tension and relaxation. Finally, do not try to practice deep relaxation after meals or before bedtime unless you want to induce sleep.

### **Seven Steps to Rapid Deep Relaxation Using Relax Biofeedback**

1. In order to learn to relax deeply, you need to practice with RELAX on a regular basis. Make a reasonable contract with yourself, one you can keep. For example, you might decide to practice with RELAX every weeknight when you first get home from work for 20 minutes. If you are particularly tense, you may need to practice twice a day for 20 minutes. Give yourself a small reward for adhering to your contract for a week and a

special reward for sticking to your agreement for four weeks. Decide what you will do if you miss a session. Do not criticize yourself; either decide to make it up or forget it. At the end of four weeks, reevaluate your progress. Decide then if you want to continue on the same schedule for another month, reduce or increase the number or length of your sessions, or choose different weekly rewards. Formalize your contract by writing it out, dating it, and signing it. You would also be wise to have it witnessed by a friend who can provide some gentle external reinforcement.

2. Arrange not to be disturbed during the time you have set aside to practice relaxation. Unplug the phone. Explain to your housemates or co-workers what you are working on and elicit their cooperation.

3. Choose a comfortable position in which you can remain for 20 minutes with minimum movement.

4. At first, use THE RELAX GRAPH as your principal form of biofeedback. Remember that your first step toward initiating deep relaxation is to learn the difference between the sensations of tension and of relaxation, and how this difference is mirrored by the trace on the graph. Most obviously, you can observe this difference when you clench and then relax your jaw. The audiotape Introductory Guided Relaxation Exercise will also help you with this. Experiment to discover which thoughts and sensations cause the trace to go up and which cause it to go down.

5. As you become aware of the subjective cues of tension and relaxation, you will want to learn how to “let go” of tension and enhance sensations of relaxation. Experiment with THE RELAX GRAPH: find out what will cause the trace to go down even more and avoid doing whatever

causes the trace to go up. You may also choose to use THE SENSORAL KALEIDOSCOPE as an alternative form of feedback to the graph some of the time.

6. Once you have learned to identify your subjective cues of tension and relaxation and know how to induce deep relaxation, you will want to establish a quick way of relaxing deeply. By now you have had enough practice experimenting with THE RELAX GRAPH to discover what you can do to initiate quickly the sensations of deep relaxation.

In fact, you may already have the ability to relax deeply within a minute. All you need to do is tune in to those physical sensations of relaxation that you have learned to identify. Some people are able to initiate deep relaxation simply by recalling a memory, a fantasy, or a word that they have learned to associate with deep relaxation.

7. As you practice the first six steps, you will be learning the seventh step: control of muscle tension. You can use THE BALLOON GAME to assist you in learning to make subtle changes in muscle tension and relaxation.

### **Transferring Your Skill of Rapid Deep Relaxation to Your Daily Life**

You may be thinking, "Why bother? All I need to do is relax deeply with RELAX for 10 to 20 minutes a day." Unfortunately, research shows that most people who start out on a regular relaxation program lose interest within three months. It is therefore extremely important that you incorporate the skill of deep relaxation into your everyday life as soon as possible, while you are still highly motivated.

When you first begin to become anxious in everyday situations is the time when you can most easily head off unnecessary arousal by taking a moment to relax deeply.

Instead of spending your busy day in a state of chronic arousal and inappropriate bracing, you can take several mini-relaxation breaks to lower your general tension level. The three exercises which follow will assist you in integrating rapid deep relaxation into even your most stressful day.

1. Once you have learned your subjective cues of tension and relaxation, select an external object, activity, or person as your personal signal to relax. The signal could be your watch, a stop light, the refrigerator, the phone ringing, or your boss entering the room. Pick one or more signals that you are sure to encounter many times during a typical day. Agree with yourself that each time you see or hear this external cue, you will take a mini-relaxation break. Use whichever relaxation technique you feel comfortable with. Soon your conscious effort to relax will become almost automatic each time you encounter your external signal. Eventually, you will be able to relax in a matter of seconds without having to suspend your daily activity.

2. At the end of each day, relax for a few minutes in a comfortable chair. Review your day, going backwards from the most recent events to when you got up in the morning. When you experience any sensations of tension or discomfort, take a moment to relax. Identify events, situations, people, things, and thoughts that create distressing feelings or sensations of the stress response. Keep a daily log of stressors and signs of the stress response. After you have kept this log for at least a week, you will be ready for the next exercise.

3. Each time you recognize that you are in a stressful situation, scan your body for signs of arousal and tension. Use the stressful situation and your body's cues of stress as signals to initiate relaxation.

At first, you will naturally forget to scan for tension when you are in the midst of a stressful situation or thought. All your life, you have been conditioned to focus on the stressor and automatically brace yourself to deal with the threat. As soon as you can remember to do so after a stressful experience, scan your body for tension and then relax briefly. Soon you will break the old habit of becoming automatically aroused when faced with a stressor, and you will become able to relax when it is appropriate. Continue to keep the log you started in Exercise 2 to help you identify situations, people, activities, and thoughts that are likely to trigger your stress response. In addition to noting your daily stressful experiences and signs of stress, record when you remembered to scan your body for tension and when and how you relaxed. The log will also serve to chronicle your progress.

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